

# EX 800



The EX 800 is an advanced professional power amplifier offering high power, comprehensive operational and protection features, and an extremely flexible interface standard.

The output circuit combines clean power with superb linearity to provide greater average and dynamic audio performance for high frequency drivers and other medium power applications. A built-in limiter prevents gross distortion during clipping to further enhance dynamic performance. A sophisticated thermal management system var-

ies fan speed with heat requirements and, in the event of over-temperature, reduces gain until normal operating temperatures return. Thermal muting occurs only in extreme cases.

The rear panel uses QSC's Open Input Architecture™ which allows the use of second generation signal processing and a wide variety of computer control, optional input connectors, input transformers, cinema crossovers, power limiters, precision attenuators, and other signal processing cards as they become available.

## F E A T U R E S

400 watts per channel at 2 ohms

275 watts per channel at 4 ohms

Full complementary class AB output circuit

Advanced thermal management system

Built-in clip limiter

Detented gain controls with 2 dB steps for easy resetting

Comprehensive LED status arrays

Split secondary configuration— independent power supply on each channel, for greater reliability

Quiet variable speed fan

Independent DC, sub audio speaker protection & thermal overload protection on each channel

Open Input Architecture™—Level 2

Patented Output Averaging™ short-circuit protection

XLR and barrier strip balanced input connectors

Mono-bridging/parallel switch

Speakon and "Touch proof" binding post output connectors

THX approved for cinema applications

3 year warranty PLUS optional 3 year extended service contract

LOAD	FTC CONTINUOUS AVERAGE	EIA WATTS
	20Hz-20kHz, 0.1% THD	1kHz, 1% THD
Stereo (W/Ch)		
8Ω	175 watts	200 watts
4Ω	275 watts	325 watts
2Ω		400 watts*
Mono-Bridged		
16Ω	350 watts	400 watts
8Ω	550 watts	650 watts
4Ω		800 watts*

\*typical



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EX Series

## OUTPUT POWER (per channel)

8 ohms, 20 Hz to 20 kHz, 0.1%	THD, 175 watts
8 ohms, 1 kHz, 1%	THD, 200 watts
4 ohms, 20 Hz to 20 kHz, 0.1%	THD, 275 watts
4 ohms, 1 kHz, 1%	THD, 325 watts
2 ohms, 1 kHz, 1%	THD, 400 watts*

## OUTPUT POWER (bridged mono)

8 ohms, 20 Hz to 20 kHz, 0.1%	THD, 550 watts
4 ohms, 1 kHz, 1%	THD, 800 watts*

\*typical

## DISTORTION:

SMPTE-M1, less than 0.05%

## FREQUENCY RESPONSE:

20 Hz to 20 kHz,  $\pm 1$  dB  
8 Hz to 100 kHz,  $\pm 3/3$  dB

## DAMPING FACTOR:

Greater than 200

## DYNAMIC HEADROOM: 2 dB at 4 ohms

## NOISE: \*00 dB below rated output (20 Hz to 20 kHz)

## SENSITIVITY: 1.0 Vrms for rated power (8 ohms)

## VOLTAGE GAIN: 35.5 (31 dB)

## INPUT IMPEOANCE: 10K unbalanced, 20K balanced

## CONTROLS:

Front: AC Switch, Ch 1 and Ch 2 Gain Knobs (with 2 dB detents)  
Back: Parallel/Stereo/Bridge Switch

## INDICATORS:

PWR-ON	Green LED
LEVEL 30	Yellow LED
LEVEL 10	Yellow LED
CLIP-CLIP	Red LED
TEMP-PROT	Red LED (flashes for over temp)

## CONNECTORS: (each channel)

Input: Barrier strip and XLR  
Speakers: "Touch proof" binding posts, Neutrik "Speakon" connectors, stereo Neutrik "Speakon"

## COOLING: Continuously variable speed fan, rear-to-front air flow

## AMPLIFIER PROTECTION:

Full short circuit, open circuit, ultrasonic, and RF protection. Stable into reactive or mismatched loads.

## LOAD PROTECTION:

On/off muting, Clip Limiting DC-fault load groundng relay with internal fault fuses.

## OUTPUT CIRCUIT TYPE:

Complementary linear outputs.

## POWER REQUIREMENTS: 100, 120, 240 Vac, 50-60 Hz

## POWER CONSUMPTION:

Normal Operation: 4 ohms per channel, less than 8 amps, 120 Vac (1000 VA) maximum (full power 2 ohms per channel): 16 amps, 120 Vac (2000 VA)

## DIMENSIONS:

19.0" (48.3 cm) rack mounting  
3.5" (8.9 cm) tall (12 spaces)  
17.9" (45.5 cm) deep (rear support ears)

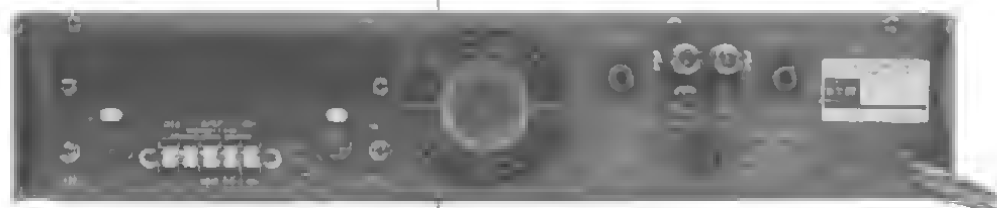
## WEIGHT: 40 lbs (18.1 kg) net, 46 lbs (20.9 kg) shipping

(Output Averaging) short circuit protection (US Patent 4,321,554)  
SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

## ARCHITECT'S AND ENGINEER'S SPECIFICATIONS

The amplifier shall contain a self-heating primary and complementary linear output devices in class AB configuration. The amplifier shall operate from 50-60 Hz AC power, with internal taps for selecting voltage 100, 120 or 220-240 Vac. The amplifier shall operate from a normal household AC circuit, drawing less than 1000 VA when driven with random program material at 1/8 rated power into four ohm load. The amplifier shall be supplied with a single molded AC cord having a non-grounded AC plug for the intended operating voltage.

\*The amplifier shall employ forced air cooling with a two speed fan for minimum audible noise.



Air flow shall be from rear to front to avoid temperature rise inside the rack. Rack mounting shall be possible with clearance necessary between amplifiers for ventilation. The amplifier shall be capable of continuous operation at 1/8 power into 4 ohm loads, for ambient temperatures up to 104° F (40° C).

The amplifier shall contain two independent channels on a common printed circuit board, with separate secondary transformer windings, power supplies, and protection systems. All protection systems shall be self-resetting upon removal of fault, and the remaining channel shall continue to operate. Each channel shall have independent protective circuitry against open circuit, short circuit, or mismatched loads. Each channel shall monitor temperature of its heat sink and power transformer, and shall trigger fan speed boost, and if necessary, signal muting to prevent excessive temperature rise. Each channel shall have on-off muting, acting for three seconds after turn-on, and within 1/4 second after turn-off or loss of AC power. Each channel shall have DC fault protection for the load, consisting of a load-grounding relay with fault fusing to interrupt power. Fault fuses shall be adequately large to prevent nuisance blowing at any output power the amplifier is capable of delivering. Each channel shall have clipping circuitry using compression triggered by the onset of clipping, to limit clipping to approximately 1% of the average output's gross high frequency overloads above 20 kHz shall result in muting until the excess signal is removed.

Each channel shall have the following controls and displays. A front panel Gain control, with 11 detents, having 2 dB steps, for attenuation plus 1, 1.4 dB, 1.8 dB, 2.4 dB, a green LED, power-on indicator, two yellow LED output indicators, indicating at 30 dB and 10 dB, a red LED showing true amplifier clipping and activation of the limiting circuit, and a red LED which indicates muting when triggered, and excessive internal temperature rise when flashing.

The output connectors for each channel shall include a "touch proof" binding post and Neutrik "Speakon" connector. A third "Speakon" connector shall be provided for the whole amplifier for mono, stereo, and mono/stereo connectors.

The input connector shall be mounted on a removable panel to permit upgrades. The standard input panel shall include Line, stereo and XLR connectors for each channel, with pin 2 high impedance inputs. The stereo can be changed with a minimum impedance of 10 ohms per side, and a minimum noise rejection of at least 53 dB from 20 Hz to 20 kHz. The standard input panel shall contain switches for mono/bridging and parallel inputs, jacks for changing the polarity of the XLR connectors, and a switch for either input level (line or mic) for each channel. It shall also have first order high and low pass filters.

The input panel shall have enough space behind it to contain a circuit board measuring up to 5.9" wide by 4.3" deep. The multi-pin connector for the amplifier shall carry any regulated DC power of +14 V, and for each channel, signals for balanced inputs, on/off command, power-on monitor, output signal, temperature clipping, and input gain indicator.

Each channel shall be capable of meeting the following performance criteria with both channels driven. Sine-wave output power of 175 watts into 8 ohms, and 275 watts into 4 ohms, 20 Hz to 20 kHz, with less than 0.1% THD. Frequency response at 0 dB below rated power shall be 20 Hz to 20 kHz within 0.1 dB. The voltage gain shall be 35.5 (equivalent to 31 dB), and the input sensitivity shall be 1.0 Vrms. The signal-to-noise ratio over the range of 20 Hz to 20 kHz shall exceed 100 dB unweighted. HF damping factor shall exceed 200.

The amplifier chassis shall occupy two rack spaces, with provision for securing the rack corners. Depth from mounting surface to top of the supports shall be 17.9" (45.5 cm).

Weight shall not exceed 40 lbs (18.1 kg). The amplifier shall be the QSC Audio Products Model EX 800.



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